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One can see from Table 2 that treatment of dysentery with sulfanilamide drugs lowers the activity of serum phosphatase (cf. group I). However, administration of supplementary quantities of vitamin C with the food increases the phosphatase activity, and this effect grows in the measure in which loading with vitamin C is increased (cf groups and II, III, and IV. On the other hand, patients who were not treated with drugs which have any effect on the vitamin C content in the organism and did not receive any vitamin C (group V), did not show any changes in phosphatase activity after treatment.

In addition to investigating the activity of serum alkaline phosphatase, we determined the relative degree of saturation of the organism with vitamin C by other methods. After determining the content of vitamin C in plasma, according to Farmer and Ebt, we carried out determinations of the index of absorptive capacity of blood according to M. M. Eydel'man's and F. Ya. Gordon's method (1). Eydel'man and Gordon's method is based on the fact that ascorbic acid, after being added to blood in vitro, is absorbed by the proteins of the blood. The degree of absorption depends on the saturation of the organism with vitamin C: the higher the saturation of the organism, the less ascorbic acid is absorbed. Thus, a high index of absorptive capacity of blood corresponds to a low degree of saturation of the organism with Vitamin C.

The results of the determinations in question are listed in Table 3. As can be seen from Table 3, a low content of vitamin C in blood plasma and a high index of the absorptive capacity of blood correspond to a low activity of phosphatase. A normal content of vitamin C in plasma corresponds to 0.9-1.2 mg %, while a normal index of the absorptive capacity of blood has an average value of 15, according to our data. Our investigations show that with a vitamin C content in plasma equal to 0.9-1 mg % and an index of absorptive capacity equal to 17, the phosphatase activity amounts to 4-6. This corresponds to values which are observed in healthy persons. A phosphatase activity lower than 4 indicates vitamin C hypovitaminosis.

To summarize, the activity of serum alkaline phosphatase is lowered in dysentery patients, particularly when they are treated with sulfanilamide drugs. Supplementary administration of vitamin C to patients lowers the biochemical expressions of vitamin C hypovitaminosis and, at the same time, increases the activity of serum alkaline phosphatase. Serum alkaline phosphatase activity in dysentery patients may serve as one of the biochemical indices of the saturation of the organism with vitamin C.

Table 1. Activity of Phosphatase in Healthy Persons and Dysentery Patients

Group Under Observation	Serum Phosphatase Activity in Phosphatase Units							No of Persons Investigated
	0-1	1-1.9	2-2.9	3-3.9	4-4.9	5-5.9	6-6.9	
Healthy persons	--	--	--	2	21	8	4	35
• Dysentery • patients	1	13	38	58	14	3	--	127

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Table 2. Phosphatase Activity in Various Groups of Patients Before and After Treatment

	<u>Group of Patients</u>				
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>
<u>No of Patients Investigated</u>	<u>17</u>	<u>16</u>	<u>11</u>	<u>13</u>	<u>16</u>
Phosphatase activity in phosphatase units:					
1st determination <u>before treatment</u>	3.5 ± 0.3	3.5 ± 0.3	3.2 ± 0.13	3.3 ± 0.17	3.5 ± 0.17
2d determination <u>after treatment</u>	2.0 ± 0.24	3.3 ± 0.27	3.9 ± 0.3	4.4 ± 0.2	3.7 ± 0.17

Table 3. Relationships Between Phosphatase Activity, Vitamin C Content in Plasma, and Index of Absorptive Capacity of Blood

<u>Indices</u>	<u>Phosphatase Activity in Phosphatase Units</u>			<u>No of Persons Investigated</u>
	<u>1-2.9</u>	<u>3-3.9</u>	<u>4-6</u>	
Vitamin C content in plasma (mg %)	0.6 ± 0.01	0.8 ± 0.02	0.9-1.0 ± 0.02-0.01	125
Index of absorptive capacity of blood	48 ± 4.5	27 ± 1.0	17 ± 2.0	262

BIBLIOGRAPHY

1. M. M. Eydel'man, F. Ya. Gorden, Vrachebnoye Delo, No 5, 1948, pp 566-570

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